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ABSTRACT

The author reviews research on the effects of motor remediation with the mentally retarded on the areas of motor ability, physical fitness, social and emotional competency, reading achievement, and intelligence. It is concluded that motor development theories have led to an increase of motor training programs for the mentally retarded, and that research has shown that such programs can improve motor ability and physical fitness, but leaves an inconclusive answer as to their effect upon social and intellectual functioning. (LS)

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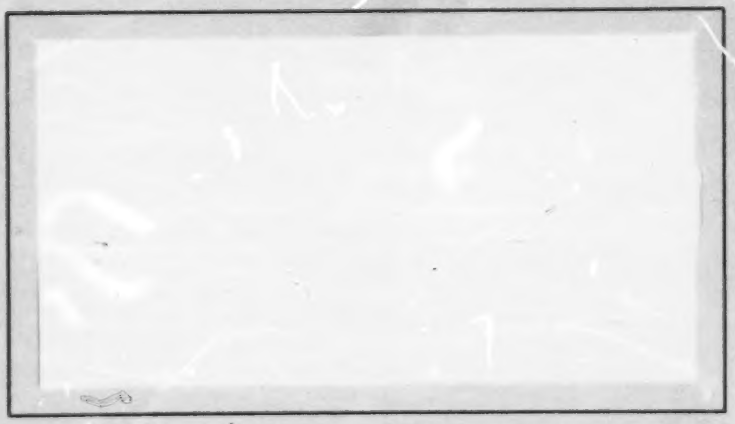

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The Effects of Motor Remediation with the Mentally Retarded: A Review of Research

Patrick J. DiRocco

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About the Author

Patrick J. DiRocco, M.S. (University of Oregon), Doctoral Fellow, Department of Physical Education and Rehabilitation Research and Training Center in Mental Retardation, University of Oregon, Eugene, Oregon.

Abstract

There has been a growing concern regarding the various usages of motor remediation for the mentally retarded. A review of the research on the differential effects of motor training programs show that they can improve motor ability and physical fitness, but leaves an inconclusive answer as to their effect upon social and intellectual functioning. Sufficient knowledge of the literature can assist educators to more properly utilize motor training programs for the mentally retarded.

Footnote

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The Effects of Motor Remediation with the MR: A Review of Research[1]

Based upon a substantial number of studies, it appears safe to conclude that persons with mental retardation have inferior motor abilities as compared to individuals of normal intelligence (e.g., Brown, 1967; Clausen, 1966; Francis & Rarick, 1957; Malpass, 1960; Rarick, et al., 1970; Sloan, 1951; and Solomon, 1968). As a result, motor remediation for the retarded student is currently in vogue. Furthermore, the works of such investigators as Kephart and Delacato have led to use of motor remediation techniques for attacking problems other than substantial motor ability. This expanded utilization of motor development programs has become a growing concern among many experts. Bryant Cratty issues a warning to this effect:

> It is believed that motor activities can be a helpful learning modality; but, to best utilize movement tasks within schools, one must carefully examine research findings rather than simply paying blind devotion to one of the popular "Movement Messiahs" (1968, p. 526).

The purpose of this paper is to review the research literature as it pertains to the effects of motor remediation with the retarded. Specifically, the areas of motor ability, physical fitness, social and emotional competency, reading achievement and intelligence will be reviewed.

Motor Ability

A popular area of research has been the investigation of whether gross or fine motor abilities of the mentally retarded can be changed as a result of motor training programs. The results strongly indicate that intensive training can improve both gross and fine motor skills.

Chasey (1971) used the technique of "overlearning" to observe what effect it would have on the retention of gross motor skills of institutionalized retarded subjects. In addition to indicating that those who overlearned acquired superior skills to members in the control group, his results revealed that those who overlearned maintained a significant level of retention after four weeks of no reinforcement.

A 15-week program of tumbling, balancing, and conditioning exercises were administered to a group of EMR children by Chasey and Wyrick (1971). The experimental group significantly improved in their gross motor tasks whereas the control group did not.

Ross (1967, 1969) investigated two related studies pertaining to the effect of a game skills program administered to EMR children. In both studies, the experimental group improved at the .001 level over the control group.

Lillie (1968) researched the effects of a motor development program on the gross and fine motor skills of retarded children. Over a period of 65 individual lessons, he presented a program that included such items as maze tracing, coloring, gross motor activities, and trampoline exercises. Although there was no significant difference for gross motor skills, a significant improvement was discovered for the experimental group in fine motor skills as compared to the control group.

Three additional studies (Kershner, 1968; Morrison & Potheir, 1972; and Oliver, 1958) reported significant improvement in motor skills, whereas Crum (1969) found no change. In studies where the subjects were profoundly mentally retarded, Auxter (1971), Kral (1972), Rarick and Broadhead (1968), Stephens, et al. (1970), and Webb (1969) all reported improvements in their subjects' motor skills.

Physical Fitness

The question of whether the physical fitness of retarded persons can be affected through proper exercise has been investigated. Results indicate that their physical fitness can be improved through the use of appropriate programs.

Corder (1966) worked with educable mentally retarded (EMR) boys and administered a program consisting of exercises and track events. Using the American Association of Health, Physical Education and Recreation Physical Fitness Test as his measure, he reported that the experimental group improved significantly on every item over the control group. Similar results were reported by Hayden (1964), Solomon and Pangle (1967), and Fund (1971).

Social and Emotional

Several studies have alluded to the effects motor programs have on the social and emotional well-being of the retarded individual. Some agreement has been found over the contention that the quality of a mentally retarded child's motor ability directly affects his social functioning.

It was Dunham's (1969) opinion that mentally retarded individuals' abilities to perform motor skills may determine their degree of social competence. In support of this opinion, Teja, et al. (1970), reported a high correlation between delayed motor milestones and impairment of social functioning in the profound, severe, and moderate mentally retarded child. In a study to determine the relationship between motor abilities and peer acceptance of retarded children, Smith and Hurst (1961) found that motor ability had a significant effect on the amount of physical contact one received.

Ross (1969) stated that an intensive motor skill training program produced improvements in the subjects' initiative and independence in play, while Corder (1966) reported that his motor training program produced no effect on the social domain. Both in Crum's (1969) and Oliver's (1958) studies an improvement in confidence and self-esteem was reported.

Reading Achievement

Two of the more popular theories of motor development have laid claim to the notion that motor remediation can affect reading ability. Specifically, these are the theories of George Getman and Carl Delacato.

Getman (1962, 1965) postulates a motor remedial technique for deficient reading skills is the use of eye exercises to improve the individual's ability to track. Published reports do not seem to support the position of a causal relationship between occular function and reading success. Cratty (1970) contends that the ability to fixate decides what one will read and that eyes fixate too fast per second to be under conscious control and therefore be trained. Dingman (1958) performed a factor analysis of eye movements with reading comprehension scores and concluded that the two were unrelated. Taylor (1965) discovered that, "Eye movements are neither the cause nor the effect of good or poor reading" (p. 199).

Delacato (1963, 1966) also prescribes a motor program for reading improvement. One of his major tenets is that the recapitulation of motor patterns will affect one's level of reading. In two separate studies of similar design, Robbins (1966, 1967) was unable to support the claim that Delacato's motor program improved reading ability, while Kershner (1968), using trainable mentally retarded subjects arrived at the same conclusion.

Even though the review of this section is by no means complete, the reported studies do warrant a critical look at the claims which have been made. This is especially true with the above two theories, both of which have received a popular following over the past decade.

Intelligence

Some claims have been made that motor training will eventually help improve intellectual functioning. However, the literature representing this relationship has presented an inconclusive answer.

Sloan (1951) stated that the more complex the motor task, the less skilled the mentally retarded were in performing them. Malpass (1960) also claimed that the motor proficiency of the mentally retarded was more highly correlated to IQ than in the normal individual. By contrast, the data from two studies (Francis & Rarick, 1957; Rarick, et al., 1970) indicated that the correlation between the physical fitness scores of the retarded and their IQ score was low.

Cratty (1968) agreed with Sloan and Malpass. He stated that if one held the IQ constant, the greater the complexity of the motor task the higher the relationship. Conversely, if one holds the motor task constant, the lower the IQ the higher the relationship.

Corder (1966) reported that, as a result of motor remediation, the experimental group improved over the control group on the full and verbal scales of the WISC at the .05 level. Morrison and Potheir (1972), Oliver (1958), and Webb (1969) all reported intellectual improvement as a result of their experimental programs. Significant improvements in perceptual performance were found by both Groden (1969) and Painter (1966).

Rarick and Broadhead (1968) indicated their motor training program had no effect on intellectual functioning. Alley and Carr (1968), Chasey and Wyrick (1970), and Fischer (1971) also reported no significant improvements in their subjects' intellectual achievement as a result of motor development programs.

Conclusion

Motor development theories have had a positive effect upon educational thinking, for they have been instrumental in directing attention to the mentally retarded in general and children with learning disabilities in particular. As an outcome of these theories there has been an increased use of motor training programs in the educational process for children who are intellectually disabled. In this age of accountability, however, educators must become more responsible for evaluating the effects of these programs. Auxter (1972) recently suggested a model for such an evaluation. Another appropriate way of determining this assessment is to have an adequate knowledge of the research. Only then can we begin to utilize these programs in the best possible way in the curriculum of the mentally handicapped individual.

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